

IN THE CLAIMS

Please amend the claims as follows.

1. (Currently Amended) A method of packaging comprising:
applying an adhesive to a first side of a finished wafer, the first side of the finished wafer having at least one die, the finished wafer having one or more datums on the first side, the adhesive being one or more of an elastomer applied in fluid form, a thermoplastic material, or a pressure-sensitive film;
controlling the application of the adhesive such that the adhesive substantially covers the entire first side of the finished wafer as a uniform adhesive layer; and
after applying the adhesive to the first side of the finished wafer, forming an array of conductive elements within the adhesive to a level substantially flush with a surface of the adhesive layer, the surface being distal to the first side, to allow the adhesive to contact a support to attach the at least one die to the support at initial contact of the array of conductive elements with the support, the array of conductive elements electrically coupled to an array of connection pads on the at least one die, wherein the array of conductive elements includes a plurality of conductive elements, wherein the one or more datums are used to align the array of conductive elements.
2. (Original) The method of claim 1, wherein forming an array of conductive elements includes:
creating openings in the adhesive, the openings aligned with the array of connection pads;
and
substantially filling the openings with an electrically conductive material.
3. (Previously Presented) The method of claim 1, wherein forming an array of conductive elements includes forming conductive material selected from one or more of lead-based solders, lead-free solders, conductive polymers, or conductive pastes.

4. (Currently Amended) A method of packaging comprising:

applying an adhesive to a first side of a finished wafer, the first side of the finished wafer having at least one die, the finished wafer having one or more datums on the first side, the adhesive being an elastomer applied in fluid form;

controlling the application of the adhesive such that the adhesive substantially covers the entire first side of the finished wafer as a uniform adhesive layer;

after applying the adhesive to the first side of the finished wafer, processing the adhesive to create an array of openings therein using the one or more datums to align the array of openings, the array of openings providing access to an array of connection pads on the at least one die; and

after processing the adhesive to create an array of openings therein, substantially filling the array of openings with an electrically conductive material to a level substantially flush with a surface of the adhesive layer, the surface being distal to the first side, to allow the adhesive to contact a support to attach the at least one die to the support at initial contact of the array of conductive elements with the support, wherein filling the array of openings with the electrically conductive material includes filling a plurality of openings.

5. (Original) The method of claim 4, wherein the method further includes applying a protective coating to a second side of the wafer.

6. (Original) The method of claim 4, wherein the method further includes singulating the at least one die from the wafer wherein the at least one die with the adhesive and electrically conductive material form an individual flip chip package.

7. (Original) The method of claim 6, wherein the method further includes surface mounting the flip chip package to a receiving support.

8. (Original) The method of claim 4, wherein the method further includes curing the adhesive.

9. (Previously Presented) The method of claim 4, wherein forming an array of conductive elements includes forming conductive material selected from one or more of lead-based solders, lead-free solders, conductive polymers, or conductive pastes.

10. - 26. (Cancelled)

27. (Currently Amended) A method of packaging comprising:

providing an adhesive layer, the adhesive layer being a substantially independent film-like structure;

after providing the adhesive layer, forming an array of conductive elements within the substantially independent film-like adhesive layer such the adhesive layer and the array of conductive elements form a structure essentially consisting of the adhesive layer and the array of conductive elements; and

after forming the array of conductive elements within the adhesive layer, applying the adhesive layer having the array of conductive elements within the adhesive layer to a first side of a finished wafer, the first side of the finished wafer having one or more dice, to couple the array of conductive elements electrically to an array of connection pads on a first die of the one or more dice.

28. (Previously Presented) The method of claim 27, wherein forming an array of conductive elements within the adhesive layer includes forming openings in the adhesive layer and forming conductive material in the openings to form the array of conductive elements.

29. (Original) The method of claim 28, wherein forming openings in the adhesive layer includes forming openings by laser cutting, chemical etching, or die cutting.

30. (Original) The method of claim 27, wherein forming an array of conductive elements includes forming an array of solder columns.

31. (Original) The method of claim 27, wherein forming an array of conductive elements includes forming an array of solder balls.

32. (Previously Presented) The method of claim 27, wherein applying the adhesive layer includes applying the adhesive layer configured as a film with a removable backing and removing the removable backing after securing the adhesive layer to the first side of a finished wafer.

33. (Original) The method of claim 27, wherein the method further includes singulating the first die from the finished wafer and forming an individual flip chip package.

34. - 58. (Cancelled)

59. (Currently Amended) A method of packaging comprising:

applying an adhesive to a first side of a finished wafer, the first side of the finished wafer having at least one die, the finished wafer having one or more datums on the first side, the adhesive being an elastomer applied in fluid form;

controlling the application of the adhesive such that the adhesive substantially covers the entire first side of the finished wafer as a uniform adhesive layer;

after applying the adhesive to the first side of the finished wafer, processing the adhesive to create an array of openings therein using the one or more datums to align the array of openings, the array of openings providing access to an array of connection pads on the at least one die; and

after processing the adhesive to create an array of openings therein, substantially filling the array of openings with an electrically conductive paste material to a level substantially flush with a surface of the adhesive layer, the surface being distal to the first side, to allow the adhesive to contact a support to attach the at least one die to the support at initial contact of the array of electrically conductive paste material with the support, wherein filling the array of openings includes filling a plurality of openings.

60. (Previously Presented) The method of claim 59, wherein the method includes applying a dispensing apparatus to place the paste in the openings.
61. (Previously Presented) The method of claim 59, wherein the method includes applying stencil/screen techniques to place the paste in the openings.
62. (Previously Presented) The method of claim 59, wherein the adhesive is cured prior to filling the array of openings with an electrically conductive paste material.
63. (Previously Presented) The method of claim 59, wherein the method includes singulating the finished wafer to provide the at least one die as an individual die.
64. (Previously Presented) The method of claim 63, wherein the method includes coupling the at least one die as an individual die to a motherboard.
65. (Previously Presented) The method of claim 4, wherein the method includes forming a chamfer around each opening of the array of openings such that each chamfer is formed for a single opening and its associated conductive element.
66. (Previously Presented) The method of claim 59, wherein the method includes forming a chamfer around each opening of the array of openings such that each chamfer is formed for a single opening and its associated conductive element.